

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/817,591

REMARKS

Claims 1-32 are all the claims pending in the application. Claims 1, 9, 13, 21, 26 and 29 have been amended to clarify the recited subject matter. Specifically, claims 1, 9, 13, 21, 26 and 29 have been amended as suggested by the examiner during a telephonic interview on October 16, 2007. No new matter has been introduced.

Examiner Interview

Applicants thank the Examiner for courtesies extended to Applicants by the Examiner during a telephonic interview between the Examiner and Applicants' representative, which took place on October 16, 2007. During the aforesaid interview, the Examiner has indicated that he is satisfied that the pending claims are patentable over the prior art of record. Thus, no patentability issues over the cited prior art were discussed. However, the Examiner raised a number of alleged concerns with respect to the pending claims from the point of view of the subject matter eligibility under 35 U.S.C. 101. Specifically, the Examiner has proposed a number of amendments to claims 1, 9, 13, 21, 26 and 29, which, in the Examiner's opinion would overcome the alleged 35 U.S.C. § 101 issues.

Claims amendments

In accordance with the Examiner's proposed amendments during the interview on October 16, 2007 and without admitting that the original claims did in fact have any alleged 35 U.S.C. § 101 issues, Applicants chose to incorporate the Examiner's suggested amendments into the aforesaid independent claims 1, 9, 13, 21, 26 and 29, in order to expedite the prosecution of

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the present patent application. Because the aforesaid claim amendments were suggested by the Examiner himself, and because the examiner did not raise any other issues during the aforesaid interview, Applicants believe that the amended claims are in full compliance with 35 U.S.C. § 101 and are otherwise patentable.

Rejections Under 35 U.S.C. § 103(a)

Now applicants will address the prior art rejections contained in the previous Office Action. Claims 1-32 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Billheimer et al. (U.S. patent No. 6,611,825) in view of Goldstein et al. (hereinafter Goldstein 1) (“Summarizing Text Documents: Sentence Selection and Evaluation Metrics”) and further in view of Goldstein et al. (hereinafter Goldstein 2) (“Multi-Document Summarization By Sentence Extraction”). Applicants traverse these rejections in view of the following arguments.

Claims 1-20

Examiner’s comments in the Final Office Action demonstrate that the Examiner entirely misunderstood the Applicants’ arguments. The Examiner assumed that Applicants argued that prior art did not teach or suggest the claim term “identified feature.” However, the phrase “identified feature” used by Applicants in the Response filed on June 19, 2007, referred to the claimed feature of the invention, wherein the sentence selected for inclusion in the document summary is deleted from the document and the terms in the selected sentence are also eliminated

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from the document, see Response of June 19, 2007, page 2, last paragraph. Accordingly, Applicants one more time respectfully submit to the Examiner that Billheimer et al., Goldstein 1 and Goldstein 2 do not teach or suggest a feature of the invention, wherein the sentence selected for inclusion in the document summary is deleted from the document and the terms in the selected sentence are also eliminated from the document. This feature is simply not present in the above three references and in the 41-page long Final Office Action, filled with clearly irrelevant mathematical formulas, the Examiner has failed to point out where such feature is taught or suggested.

In the Response to Arguments section of the Final Office Action, the Examiner attempts to argue that Goldstein 2 teaches deleting “less important” span of text from the original document, as a way of generating document summary. Specifically, the text left after the deletions are performed constitutes the document summary with all unnecessary text eliminated, see Goldstein 2, section 2, first paragraph. The Examiner further argues that Goldstein 1 teaches ranking text sentences, see Goldstein 1, Abstract. Thus, the Examiner argues, one may combine teaching of Goldstein 1 with teachings of Goldstein 2 to delete (as taught by Goldstein 2) low-ranked sentences (as determined in accordance with Goldstein 1) in order to arrive at document summary, which includes only the important information, see the Final Office Action, page 32, last paragraph.

In response, Applicants respectfully submit that the combination of teachings of Goldstein 1 and Goldstein 2 still does not each or suggest the feature of the invention, wherein

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the sentence selected for inclusion in the document summary is deleted from the document and the terms in the selected sentence are also eliminated from the document. In fact, the combined teachings of Goldstein 1 and Goldstein 2 would lead a person of ordinary skill in the art in the opposite direction from the limitation of the claims 1, 9 and 13. Specifically, while the Examiner's combination of Goldstein 1 and Goldstein 2 suggests deleting the less important sentences, which are not included in the text summary (they are being deleted from the summary), claims 1, 9 and 13 recite a radically different feature of the invention, wherein the sentences that are being selected for inclusion in the document summary are being deleted from the document and the terms in the selected sentences are also eliminated from the document.

Thus, the combination of Goldstein 1 and Goldstein 2 suggested by the Examiner does exactly the opposite what the claim recites. While Goldstein 1 and Goldstein 2 would delete the sentences that do not appear in the summary, claims 1, 9 and 13 recite deleting sentences that are being selected for the summary. Moreover, Goldstein 1 and Goldstein 2 do not teach or suggest eliminating the terms in the sentences selected for the summary from the document. Thus, combined teaching of Goldstein 1 and Goldstein 2 are radically different from the element of the claims, wherein the sentence selected for inclusion in the document summary is deleted from the document and the terms in the selected sentence are also eliminated from the document and, for this reason, claims 1, 9 and 13 are not unpatentable over the combination of Billheimer et al., Goldstein 1 and Goldstein 2.

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Applicants again respectfully submit that they have checked the portions of Goldstein 2, where, as the Examiner alleges, Goldstein 2 allegedly teaches that the sentence selected from the document summary is deleted from the document and the terms in the selected sentence are also eliminated from the document, see Final Office Action, page 5. Applicants could not find any of the alleged teachings. Goldstein 2, as Goldstein 1 and Billheimer et al. never mention deleting from the document of sentences selected for inclusion into document summary and eliminating the terms in the sentences selected for the summary from the document. In this regard, Applicants respectfully submit that Goldstein 2, as Goldstein 1 and Billheimer et al. references are the applied prior art and not the Examiner's analysis. When the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such teaching or suggestion appears in the reference. See *In re Rijckaert*, 28 U.S.P.Q.2d 1955,7 (Fed. Cir. 1993). In the Office Action, the Examiner has clearly failed to do so. Thus, the amended claims 1, 7, 10 and 16 are not anticipated by Jurafsky et al.

As Applicants stated previously, the portion of Goldstein 2 that the Examiner alleges to disclose deleting sentences and terms, in fact does not contain any such disclosure. Specifically, in this section, Goldstein 2 states that the document summary created by the summarization algorithm MMR-MD with $\lambda=0.3$, shown in figure 3, has lower information redundancy compared with the summary created by MMR-MD summarization algorithm with $\lambda=1$, which is shown in figure 2, see Goldstein 2 at page 44. However, this improvement is achieved in Goldstein 2 not by deleting the selected sentence from the document and eliminating the terms in

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the selected sentence from the document, as claimed, but due to the use of the scoring formula shown in figure 1 of Goldstein 2. In fact, the summaries shown in both figure 2 and figure 3 are generated using the same algorithm, which neither deletes the selected sentence from the document nor eliminates the terms in the selected sentence from the document. In more detail, the score of the MMR-MD algorithm of Goldstein 2 consists of a similarity metric Sum1 and an anti-redundancy metric Sum2, which are combined with weights λ and $1-\lambda$, see figure 1. The value of the Sum2 anti-redundancy metric increases when a sentence is similar to the previous sentence. The smaller is the value of the weight λ , the greater weight in the result does the anti-redundancy metric Sum2 has. Redundant summary in figure 2 corresponds to $\lambda=1$, while the low-redundancy summary in figure 3 corresponds to $\lambda=0.3$. On the other hand, nowhere does Goldstein 2 mention the claimed deleting of the selected sentence from the document and eliminating of the terms in the selected sentence from the document.

In the Final Office Action, the Examiner simply points to the result of the algorithm of Goldstein 2 (which does not involve any deletions at all) and states that this result is somehow “equivalent” to the specifically claimed step involving sentence and word deletions. Applicants respectfully submit that this is improper and that the Examiner is apparently very confused as to the requirements of the law. The cited references must collectively teach or suggest each and every limitation of the claims. The equivalence of result, referred to by the Examiner, without disclosure of the specific claim limitations, is not sufficient to establish prima facie case of obviousness. Here, none of the cited art teaches the aforesaid deleting the selected sentence from

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the document and eliminating the terms in the selected sentence from the document. Clearly, the claimed deleting the selected sentence from the document and eliminating the terms in the selected sentence from the document is not the same and not equivalent to the use of the scoring formula with weight λ shown in figure 1 of Goldstein 2.

Moreover, even the results of the claimed deletion/elimination and the formula of figure 1 of Goldstein 2 are not the same. Specifically, Goldstein 2 punishes all sentences according to their similarity to previous selected sentences, see Goldstein 2, at page 43. Thus, both the redundant (identical) and similar sentences are affected in Goldstein 2. On the other hand, claims 1, 9 and 13 recite deletion of only the selected sentence itself, which has no effect on similar sentences. Thus, not only the algorithm of Goldstein 2 is different from the claimed invention, but even the results of the two are very different.

Thus, for all the foregoing reasons, independent claims 1, 9 and 13 are not unpatentable over Billheimer et al., Goldstein 1 and Goldstein 2.

In addition, with respect to claims 2, 10 and 13, Applicants respectfully submit that because Goldstein 2 does not delete the selected sentence from the document and does not eliminate the terms in the selected sentence from the document, it also does not recreate the weighed document term frequency in accordance with deleting and eliminating. Goldstein 2 always uses the formula shown in figure 1, without deleting any sentences or terms. The elimination of redundancy is accomplished by using the weight λ and the anti-redundancy matrix Sum2, without deletions being performed. Because there are no deletions, nothing needs to be

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recreated in Goldstein 2. Thus, claims 2, 10 and 13 are patentable for this additional reason as well.

With respect to dependent claims 2-8, 10-12, and 14-20, while continuing to traverse the Examiner's characterization of the teachings of the references used by the Examiner in rejecting these claims, Applicant respectfully submits that these claims are patentable at least by definition, by virtue of their dependence upon the patentable independent claims 1, 9 and 13.

Claims 21-32

With respect to independent claims 21, 26 and 29, Applicants continue to maintain that none of the cited prior art, or any combination thereof, teach or suggest performing singular value decomposition on the terms-by-sentences matrix to generate a singular value matrix and a right singular vector matrix. In the Final Office Action, the Examiner appears to admit that Billheimer et al., Goldstein 1 and Goldstein 2 do not teach performing singular value decomposition on the terms-by-sentences matrix to generate a singular value matrix and a right singular vector matrix. However, the Examiner states that one of ordinary skill in the art would substitute (!) Latent Semantic Indexing or Singular Value Decomposition allegedly taught by Billheimer et al. in place of the claimed singular value matrix and a right singular vector matrix, "to achieve the same result", see Final Office Action, page 38, second paragraph.

In response, Applicants respectfully submit that Examiner's argument is totally without merit. In order to render a claim unpatentable under 35 U.S.C. 103(a), each and every claim limitation must be actually taught or suggested in the prior art. Section 35 U.S.C. 103(a), does

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not provide for “substitutes” and every claim limitation must be disclosed. The Examiner may not “substitute” one claim limitation for another one, even if this achieves the same result. Thus, if the claims 21, 26 and 29 recite singular value matrix and a right singular vector matrix, these two matrixes must be disclosed in the prior art.

Here, neither Billheimer et al. nor Goldstein 1 nor Goldstein 2 ever mention the claimed (1) singular value matrix and (2) right singular vector matrix. Thus, the combination of the prior art of record fails to teach or suggest all the limitations of the claims 21, 26 and 29 and, therefore, these claims are not unpatentable over the combination of Billheimer et al., Goldstein 1 and Goldstein 2.

Moreover, as stated by Applicants in their Response of June 19, 2007, the only mention of the SVD in Billheimer et al. is a very cursory reference in the background section of the specification. Neither Billheimer et al. nor Goldstein 1 nor Goldstein 2 teach or suggest using the SVD to generate a singular value matrix and a right singular vector matrix, as recited in the aforesaid claims 21, 26 and 29. This provides an additional reason for patentability of claims 21, 26 and 29.

With respect to dependent claims 22-25, 27, 28, and 30-32, while continuing to traverse the Examiner’s characterization of the teachings of the references used by the Examiner in rejecting these claims, Applicant respectfully submits that these claims are patentable at least by definition, by virtue of their dependence upon the patentable independent claims 21, 26 and 29.

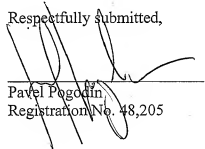
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Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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